Antimicrobial Susceptibility

To the Editor:

The article, “Variations in Antimicrobial Susceptibility Patterns Among Three Hospitals,” in the January 1979 issue of LABORATORY MEDICINE, presented interesting data on variations in the effectiveness of different antibiotics on isolates from patients in three neighboring hospitals. However, these differences were attributed to variations in “species of microorganisms in individual hospitals” (paragraph 2) without consideration for the characteristics of the patient populations.

The VA Hospital where I work is a 480-bed general medical and surgical facility also, and across the street is a teaching hospital of a similar size. The VA patients have a much longer hospital stay on the average. Many are chronically ill, and many are awaiting nursing home placement. These patients often have urinary tract infections from indwelling catheters, and they are also likely to develop decubiti and other complications from long-term hospitalization.

Consolidating and rearranging the data which were presented in Tables I, II and III in the article show some interesting correlations. The following chart shows the percentage of the total isolates of each organism under study.

It can be seen that in a population of children, E. coli and S. aureus are the primary isolates. The VA Hospital cultures more isolates with more resistant gram-negative organisms such as Serratia, Proteus (especially indole-positive species), and Pseudomonas. These organisms are quite resistant initially and after recurrence and prolonged treatment become exceedingly difficult to treat. This is well shown in Table IV from the original article.

Although the VA has much more resistant strains of Proteus and Serratia, a given patient must be evaluated on his or her own clinical data. A veteran who happens to be a 22-year-old woman may fit the UHC data more often than the VA data.

Summaries of sensitivity patterns for given hospitals are significant epidemiological data, but when it comes to treating an individual patient the medical staff must consider all pertinent information to find the “drug of first choice” for that unique individual.

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Future Laboratory Supervisors

To the Editor:

Although I agree with Ms. Martin’s statement of the problem and suggested solution discussed in her article, “Developing Supervisors for Tomorrow,” which appeared in the January 1979 issue of LABORATORY MEDICINE, I disagree with her order of priority. There is a bigger problem to be solved first if we do not wish to create a generation of qualified but frustrated managers.

There is the need for qualified medical technologists to be prepared as the future managers of our laboratories. Some scholastic programs are encouraging their graduate students to attend management courses. I personally believe that these courses should be mandatory.

Another positive note is that many service-rendering institutions have continuing education programs in which the duties, responsibilities and expectations of a manager are discussed. Therefore we are trying, although slowly, to rectify these past deficiencies. But I believe that the lack of competent managers is not the main problem. Has anyone thought about the tremendous frustration of capable and qualified personnel when they have only the theoretical power of decision-making and problem-solving?

Before, or at least concomitant with, our effort to give rise to a generation of skillful managers, we should attempt to change the attitudes and beliefs of the men that truly are in charge of the laboratory, administration and staff personnel.

It is no secret that many qualified laboratory supervisors have as a first enemy the omnipresent and omniscient pathologist, and here in all earnestness I beg the pardon of those pathologists who consider laboratory personnel as a team of coworkers and not of subalterns.

I am not advocating the “non-development” of supervisors. I am just cautioning enthusiastic educators not to lose sight of a problem greater and more difficult to solve: the fight for the right of supervisory personnel to exercise their judgment, to use their knowledge, to utilize their power of decision-making inherent in the position they occupy.

The solution to this problem is two-fold: the recognition of the abilities of a well-qualified supervisor by her superiors and the proper utilization of the supervisor’s abilities by her superiors.

In support of the first I would point out that there are few situations more depressing, frustrating and counterproductive than being in a position of responsibility with real problems to solve and only theoretical power—power outlined in the job description but never really delegated.

As for the second, I have a strong belief that each one of us has a field in which we perform superbly. Once that is recognized it should be developed to its full potential. Once a supervisor has been recognized as
Author's reply:

Regrettfully, I am sure there are many who feel as Ms. Riley does. However, I constantly remind myself that “the pessimist sees the difficulty in every opportunity; while the optimist sees the opportunity in every difficulty.” We must be an optimist! She is correct in asking people “not to give up,” because as long as there is hope in improving our profession, it will be done.

Just this past week I saw a picture on a poster in a pathologist’s office of two seagulls flying high over a stormy sea. The caption below read, “We do because we think we can.” With people such as yourself sharing your thoughts, feelings and opinions, I am confident “we can” together.

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Downey Cells

To the Editor:

The article “Infectious Mononucleosis: Part I. Morphologic Aspects” by Robert W. McKenna, M.D., in the March 1979 issue of LABORATORY MEDICINE states that the Downey Type II cell is the most frequently encountered atypical lymphocyte in infectious mononucleosis.

In the Handbook of Hematology IV by Hal Downey, Hoeber, 1938, on page 2596, it states that “Type I (Figs. 1–6) is the type most commonly seen,” referring to the prior sentence describing the three types of lymphocytes seen in infectious mononucleosis.

Also, in the Seventh Edition of Clinical Hematology by M. M. Wintrobe, page 1364, it is stated that Type I is the most common. There is some confusion on this point and it would be of interest to get an explanation from Dr. McKenna.

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Author’s reply:

Section 36 on infectious mononucleosis (IM) in Downey’s Handbook of Hematology was written by Frank J. Heck. The reference Heck cited to support the statement that the Downey Type I atypical lymphocyte was the type most commonly seen in IM was the classic paper on atypical lymphocytes by Hal Downey and C. A. McKinlay published in Archives of Internal Medicine in 1923. This paper was entitled “Acute lymphadenosis compared with acute lymphatic leukemia.” The same reference is cited on page 1364 of Wintrobe’s Clinical Hematology as the only reference in support of a similar conclusion that the Downey Type I atypical lymphocyte is the most common in IM.

In the 1923 Downey and McKinlay study, nine patients with a self-limited blood lymphocytosis and lymphadenopathy were reported and the morphology of the blood lymphocytes and clinical manifestations were compared with those of patients with acute lymphatic leukemia (ALL). Although the clinical descriptions of most of Downey and McKinlay’s patients were consistent with IM, the diagnosis was not documented in any of the nine patients because serologic studies for IM were not available at that time. Downey described the morphology of the atypical mononuclear blood cells in these patients in detail and divided the atypical cells into three morphologic types which are now referred to as Downey cells or Downey atypical lymphocytes. In five of the nine patients studied, Type I atypical lymphocytes were most commonly encountered, in three patients Type II were most common, and in a single case Type III predominated. It appears that several of the nine cases of atypical lymphocytosis were selected because of diagnostic problems; some of the patients were originally diagnosed as having ALL or were suspected of having ALL. Downey and McKinlay emphasized the morphologic distinction of atypical lymphocytosis such as seen in IM from the leukemic cells in acute lymphatic leukemia (ALL). In our experience, when the question of a possible leukemic process arises in a patient with atypical lymphocytosis, it is most often when Downey Type I cells predominate in the blood smear. The apparent selection of problem cases by Downey and McKinlay might help to explain why in five of nine patients Type I cells were most common. When one studies Downey’s descriptions of the various types of atypical lymphocytes and the excellent camera lucida illustrations in Downey and McKinlay’s 1923 paper and in the Downey Handbook of Hematology or the photomicrographs in Wintrobe’s Clinical Hematology, the Type II Downey cell is quickly recognized as the atypical lymphocyte which predominates in most cases of IM. This has been true in our experience and also appears to be the experience of others.

Dr. Dorothy Sundberg, Professor in the Department of Laboratory Medicine and Pathology at the University of Minnesota, was a student of Hal Downey and long-term associate of his. Dr. Sundberg, in personal communication, explains that after his 1923 study of atypical lymphocytes, when Dr. Downey had the opportunity to study the blood smears of many more patients with IM, he stated on a number of occasions in lectures and privately that the Type II cell was most common in IM.

Although Downey Type II cells are usually numerically the most prominent atypical lymphocytes in blood smears from patients with IM they are not invariably so and in some cases, such as those described in 1923 by Dr. Downey, Type I and possibly Type III atypical lymphocytes may predominate. In some instances the identification and quantitation of the specific types of Downey cells may have relevance in atypical lymphocytosis. In the large majority of cases, however, recognizing that the cells are atypical...
lymphocytes and understanding their significance so that the appropriate serologic studies are performed to arrive at a definitive diagnosis is most important.

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The Dispirited Driver—Rebuttal

To the Editor:

I call your attention to page 149 of the March 1979 issue LABORATORY MEDICINE, and the article there by Dr. Richard C. Froede.

I disagree with Dr. Froede’s remarks and conclusions and submit the following rebuttal for your consideration.

1. The presence of severe coronary artery disease in a dead driver who has sustained significant traumatic injuries to vital organs cannot be used to exclude the accidental nature of the death. Severe coronary artery disease should be given as the cause of death in an auto crash only when significant trauma is absent. Since more, if not all, drivers have some degree of natural disease, the presence of pathologic conditions other than trauma should not be surprising. The exact nature of the traumatic pathology would have been a help in the original article by Dr. Froede.

2. Eyewitnesses from other cars are often in error. The driver of another car saw the victim “slump forward” but he could not conclude that the driver was unconscious (or dead).

3. Post mortem cardiac enzymes in a case of fatal trauma are a greater source of confusion than of information and should be avoided. The serum available from the previous 24 hours (previous to what?) can be salvaged by the Medical Examiner, but his conclusions should be conservative.

This case is obviously an accidental death. To code it as a natural disease, to wit: cardiac, is an error.

The blood alcohol, if properly drawn, at 176 mg/dl is certainly a contributory cause. To ignore it here, (or even in Arizona) and to “re-examine” the autopsy to increase the chances of an insurance award is less than objective.

“Blood” alcohols determined on blind taps of a traumatized chest are faulty. The pathologist should obtain this important sample himself, using the heart as the source. A ruptured viscus, spilling unabsorbed alcohol into pooled chest blood, or vomitus in the airway, aspirated through the chest needle, will give an elevated blood alcohol sample that may never have been in circulation.

Medical Examiners should adopt reasonable rules for such cases, thereby avoiding the appearance of arbitrary changes when “circumstances” for insurance are later brought out. One such rule is that when there is fatal injury and significant natural disease, the case is probably an accident. This rule should be applied before the insurance problem is pled in the pathologist’s office.

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Author’s reply:

I am pleased to discover that not only was the article read but that it achieved one of its primary medico-legal objectives, i.e., decision-making of the pathologist involved in medico-legal cases. It is a charge to the pathologist performing these investigations, usually by statute, that the cause and manner of death be determined. To determine the cause of death, all of the pathologic changes must be taken into consideration and essentially prioritized. In some cases this is not as simple as it sounds and the pathologist must be prepared to defend the interpretation of the findings either within the profession or in a court of law. Even in the most complete autopsies, there is the occasional case where nothing is demonstrable, either pathologically or toxicologically. It is in these cases that the greatest medicolegal problems arise. The second interpretation or conclusion that the pathologist must reach is that of the manner of death, and this is based upon the circumstances under which the death occurred as well as evaluation of the autopsy and toxicologic findings. It is in essence a legal, not a medical, judgment.

In this case the traumatic injuries were extensive to the head and thorax and at first were considered by the pathologist who performed the autopsy to be the cause of death. It was not until later when the clinical records were reviewed, the autopsy materials re-evaluated, and further law enforcement investigation took place that the pathologist changed his opinion. This opinion was reviewed by several forensic pathologists who concurred on the final interpretation including the fact that the injuries incurred were sufficient to cause death. There remained the basic fact that the disease was quite extensive and either could have caused a state of unconsciousness which in turn resulted in the accident or was the immediate as well as the basic or proximate cause. In this case the injuries were considered perimortem or possibly postmortem.

Most pathologists are sufficiently trained and experienced in their profession to have no or few problems in interpretation of the cause of death. It is in the interpretation of the manner of death that causes most of the problems in medicolegal death. In this case, whether accidental or natural death, the death benefits would have been paid if it had not been for the problem of the blood alcohol. It then becomes a problem for the consulting pathologist to render a decision. I wholeheartedly agree with my dissenter’s opinion on the blood alcohol interpretation in traumatized victims. The blood used for testing must be taken from an area away from the trauma or be confirmed with vitreous and tissue alcohol levels. Once the case is accepted for evaluation, the con-

References


To the Editor:

TORY MEDICINE seems superfluous Absolute Reticulocyte Count article by Hilda Prouty, MT(ASCP), which, as shown in the article, can tion concerning effective erythro­retic count) affords the same informa­tion in the March 1979 issue of LABORA­the method of calculation. The only seat in the history books alongside­poiesis. In addition, the absolute retic count is not based on an arbitrary “normal” RBC, Hb, or PCV value which, as shown in the article, can give variable results depending on the method of calculation. The only role the corrected retic count should have in hematology is a comfortable index, saturation index, and volume index.

Patrick E. Lantz
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Gross Examination

To the Editor:

May I add a word of caution regarding the article by Leo Kelly, PA, in the June 1979 issue of LABORATORY MEDICINE.

During my residency training, one of the most frequent questions asked by my chief when discussing a microscopical tissue diagnosis was “What did the gross look like to you?” He continually stressed that a major portion of the diagnostic impression should be formed by a careful inspection and description of the gross specimen, and that only by examination of the gross tissue could truly representative sections be taken. We were encouraged to be as neat a path from the cutting board to the microscope. Mr. Kelly demonstrates ignorance of the practice and scope of anatomic pathology if he feels that pathology residents should be freed from gross examination at the cutting board and autopsy table for more time at the microscope. A resident who is not thoroughly trained in gross examination is not adequately trained in anatomic pathology.

Meaningful anatomic pathology interpretations must be based on a thorough knowledge of clinical medicine. Without this knowledge, autopsy pathology becomes merely an exercise in dissection. I feel that no two­year college course in the isolated subjects mentioned in this article can confer the depth and breadth of knowledge of clinical medicine needed in this area. Proper clinicopathologic correlation of autopsy materials depends upon the ability to properly interpret the subtle relationships between the patient’s clinical history, hospital course, effects of medication and treatment, and laboratory studies, as well as a thorough knowledge of the disease process.

Autopsy examination is a very important service to the clinician, but only if this examination is conducted by someone with knowledge of the relationships between these various parameters. I feel that the pathologist assistant may well have a place in the hospital pathology service, but that his responsibilities must be sharply limited, and that he should certainly not be used in either a supervisory capacity, or as a substitute for the pathologists’ hands, eyes and breadth of medical knowledge. If the anatomic pathologist abrogates his responsibility in this area he is doing a disservice to the assistant, himself, and ultimately and most importantly, to the patient.

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Coagulase Table Correction

To the Editor:

In regard to the article, “Coagulase Activity: Plasma Suitability and Anti­coagulants,” which appeared in the June 1979 issue of LABORATORY MEDICINE, I would like to note three errors. All appear in Table I on p. 359. Culture 1 should be negative when incubated with both human plasma (EDTA) and human serum. The positive control with human serum should also be a negative reaction.

Thank you.

Cheryl V. Maloney, MT(ASCP)
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Journal Makeup

To the Editor:

I have been getting LABORATORY MEDICINE for five years and I am really tired of the way the journal is laid out. I like to tear various articles out and file them. For example, I like to keep all the C/E articles together according to the topic, and I like to have them in sequence. Whenever I take out one article, the first page of the next article is on the last page of the one before! It would be so much more convenient if you could put advertising between the articles to keep them separated.

Also lately you’ve been putting application forms (such as C/E Update exam applications) on the other side of the page of some of the articles. If I want to save the article then I can’t use the application form. Again, it would be so much more practical to place the application forms on the other side of an advertisement page!

Thank you!

Barbara Linkowski, MT(ASCP)
Freehold, New Jersey

To the Editor:

Others as well as myself taking the C/E Update examinations would like to have the order forms so placed in LABORATORY MEDICINE that when they are removed no portion of the C/E Update article is disturbed.

For instance, in the January issue a substantial amount of the discussion regarding Febrile Agglutinins would be lost if the C/E Update exam order form were removed.

Kenneth F. Ernst, M.D.
Tiburon, California

Editor’s Reply

You have a valid point, Ms. Linkowski and Dr. Ernst. If you will examine recent issues you should note that a change has already taken place. We will try to keep up the good work while maintaining cognizance of our
Microbiological Specimens

To the Editor:

"Improper Microbiological Specimens—A Shocking Deficit in Health Care" by Robert H. Crates, MT(ASCP), in the April issue of LABORATORY MEDICINE is the most comprehensive and compelling review article dealing with specimen quality assurance that I have seen published.

It does require fortitude to deal with some of the more demanding physicians. Even though our patients do not pay for our service we are not hesitant to discard a specimen for the reasons given by Mr. Crates.

My congratulations to you for the inclusion of this often overlooked area of laboratory medicine.

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To the Editor:

I applaud R. Crates’s article in the April issue of LABORATORY MEDICINE on “Improper Microbiological Specimens—A Shocking Deficit in Health Care”, as I am sure many clinical microbiologists have done the same. It was excellent! I have experienced and dealt with situations similar to those he writes about in his article. Apparently I am not alone . . .

I am a strong advocate for practicing relevant clinical microbiology. I am very much against doing irrelevant work for the sake of the “not too knowledgable” clinician. As a clinical microbiologist I am not out to steal anyone’s “thunder,” but just to do my job right to benefit the “knowledgable” clinician and his supposedly ultimate concern, the patient!

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Staining Millipore Filters on the SKI Stainer

Staining millipore filters can be a chore. This is how I made the task easier using the SKI stainer. After filtration and fixation, the 5 micron, SM Type Millipore filters (Millipore Corporation, Bedford, MA) are cut in half. Each half is attached to a slide with a hair clip. The clip does not interfere with the movement of the SKI stainer (SKI Instruments, Honeywell Inc., Denver, CO) when the spring of the clip is attached toward the bottom of the slide.

Load the SKI stainer holder with slide and filter, clip onto the stainer where desired and stain (Fig. 1).

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